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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,869	12/19/2001	Rene Jean Zimmer	DN2001205	3717

27280 7590 03/25/2005

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EXAMINER	
MAKI, STEVEN D	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/024,869	Applicant(s) ZIMMER ET AL.	
	Examiner Steven D. Maki	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

sidewall / tread

2) **Claims 1-8, 10-16 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Kemp (US 6253815) in view of Roberts et al (US 4198774) and optionally Ohsawa and Lobert et al.**

Kemp et al discloses a tire having asymmetrically shaped projections. See for example figure 8 or 10. Kemp et al recognizes that the projections can be undercut. See col. 5 lines 47-53. The projections are provided in a groove or on a sidewall of the tire. See col. 4 lines 50-54. Kemp et al teaches that one side (the shorter side) may be inclined at an angle of substantially 90 degrees whereas the other side is inclined at a smaller angle so as to reflect a desired amount of light. See col. 5. Kemp et al discloses an example height of 0.25 mm for the projection. See col. 5 lines 7-18. Kemp et al does not recite using a height of 1-100 micrometers (0.0002-0.1 mm) for the projection.

As to claim 1, it would have been obvious to one of ordinary skill in the art to form Kemp's projections such that the projection has a height of 1-100 micrometers (0.0002-0.1 mm) and is an undercut asymmetrically shaped projection defining an angle of 5-60 degrees in view of (1) Kemp et al's teaching to form asymmetrically shaped projections having a small height (e.g. 0.25 mm) and defining an acute angle so as to reflect a

desired amount of light, (2) Roberts et al's teaching that projections for indicia may be undercut (see figure 5E) and optionally (3) Ohsawa and Lobert et al's suggestion to form asymmetrically shaped projections, which define an acute angle, with a height small enough to reduce resistance to fluid flow; it being emphasized that (a) Ohsawa et al specially suggests using a projection height of 0.01-0.5 mm to reduce resistance to fluid flow and (b) Lobert specifically teaches the use of undercut projections (figure 4b). Kemps use of projections to reflect light to improve visibility of indicia corresponds directly to applicant's use of projections to improve optical appearance. See paragraph 19 of applicant's specification. Kemp's disclosure of the small height of .25 mm reasonably suggests a height such as .1 mm falling within the claimed range. Although Kemp et al does not prefer undercut projections (see col. 5 lines 48-53), Roberts et al shows that projections, which like Kemp et al's are for visual effect, may be undercut if desired. No unexpected results of increased visual effect or ease of manufacturing over the applied prior art has been shown.

As to the dependent claims: As to claim 2 (angle of 15-55 degrees), Kemp et al suggests using asymmetric projection having sides defining an acute angle. As to claim 3 (curved line apexes), see col. 4 lines 59-63 of Kemp et al. As to claim 4, note Kemp et al's suggestion to incline one side at an acute angle (e.g. alpha 161). As to claim 5, it would have been obvious to orient neighboring projections of Kemp et al so as to define the claimed non-zero angle beta ranging from -15 degrees to + 15 degrees since Kemp et al teaches that the projections may be in radial alignment instead of a parallel alignment (col. 4 line 64 - col. 5 line 6, col. 12 lines 17-19). As to claim 6, note the

spacing of the projections shown by Kemp et al. As to claim 7, the limitation of the sides being slightly curved would have been obvious since Kemp et al teaches at col. 4 lines 55-63 that the projections do not have to have a perfect triangular cross section. As to claim 8, the claimed varying angle alpha would have been obvious in view of Kemp et al's teaching to vary the cross section of the projections (e.g. figure 17). As to claims 10-13 (tread), the limitations therein would have been obvious in view of (a) Kemp et al's suggestion to use the projections in a tread such as in a groove to create an optical effect and optionally (b) it is taken as well known / conventional per se to color the sidewalls and bottom of a groove (albeit with a "smooth" colored rubber layer) to improve the appearance of the groove. As to claims 14 and 15, Kemp et al discloses lettering on a sidewall of a tire comprising the projections.

As to claim 16 (mold), Kemp et al forms the projections using a mold. See col. 10 lines 25-35. As to claim 18, Kemp et al teaches curing (vulcanizing) the tires. Again see col. 10 lines 25-35.

3) **Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kemp (US 6253815) in view of Roberts et al and optionally Ohsawa and Lobert et al as applied above and further in view of Attinello et al (US 5645660).**

As to claim 9, it would have been obvious to one of ordinary skill in the art to use the claimed varying heights for the projections of Kemp et al since Attinello et al suggests using different heights for small projections on the sidewall of a tire so that if the tire scruffs a curb only the outermost ridges may be damaged.

4) **Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kemp (US 6253815) in view of Roberts et al and optionally Ohsawa and Lobert et al as applied above and further in view of Baker (US 5603796).**

As to claim 17, it would have been obvious to provide a tape with the projections of Kemp et al and adhere the tape to a vulcanized tire since (a) Kemp et al suggests using the projections, which are defined by corresponding recesses (e.g. asymmetric triangular recesses), in indicia on the sidewall of a tire, (b) Kemp et al suggests using known techniques to form the projections on the tire (col. 10 lines 25-35) and (c) Baker shows providing indicia defined by recesses on a sidewall of the tire by providing a tape (applique) having the recesses therein and bonding the tape (applique) to a tire before or after mounting the tire to a vehicle. In view of Baker's description of "before or after the tire 14 is mounted to a vehicle", one of ordinary skill in the art would readily understand that the tire is vulcanized when the tape (applique) is adhered thereto.

tread

5) **Claims 1-13 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsawa (US 2001/0032691) in view of Lobert et al (US 4750693) and Japan '135 (JP 11-59135).**

Ohsawa discloses a tire having grooves wherein projections are provided on the sidewalls of the groove. The projections have a depth (height) of 0.01-0.5 mm (10 to 500 micrometers) such as 0.05 mm (50 micrometers). The projections reduce resistance to the flow of water in the grooves to improve drainage efficiency of the grooves. Ohsawa teaches "... a number of minute vortexes can be generated along the

groove walls to reduce the frictional resistance between the water and the groove walls thereby to improve the wet performances at an actual running time" (paragraph 14). The pitch P of the projections is less than or equal to two times the depth D. See paragraph 27. Ohsawa's teaching to use **P ≤ 2D** strongly suggests using an angle within the claimed range of 5 to 60 degrees. For example: In the tire of Example 1 in which **P = D**, an angle α of 53.2 degrees is defined. Another example: In the tire g of Table 1 in which **P = 0.75 D**, an angle of 41.1 degrees is defined. With respect to the determination of Ohsawa's acute angle, see pages 3 and 4 of office action dated 5-18-04. At paragraph 23, Ohsawa teaches that asymmetrically shaped grooves, which define asymmetrically shaped projections, may be used. At paragraph 164, Ohsawa teaches that other shapes may be used for the smaller grooves defining the projections "if they have the effect to reduce the resistance to the water flow". Ohsawa does not recite using undercut projections.

As to claim 1 (tire), it would have been obvious to one of ordinary skill in the art to configure Ohsawa's projections such that

- the projection is undercut,
- the projection has two sides of unequal length and is thereby asymmetrical, and
- defines define an angle alpha of 5-60 degrees (a relatively small acute angle)

since (1) Ohsawa, directed to the problem of reducing resistance of water flow, teaches forming projections with a desired shape (e.g. an asymmetrical shape) such that the pitch is less than two times the depth and so that resistance to flow of water is reduced,

(2) Lobert et al, directed to reducing drag between a moving body and a flowing medium such as water, teaches using an undercut asymmetrical shape (figure 4b) for projections for reducing resistance to a flowing medium, and (3) Japan '135 shows one of ordinary skill in the a tire art that undercut projections may be formed in grooves of a tire tread (see figure 3). No unexpected results of reducing resistance to water flow over the applied prior art has been shown.

As to claim 16 (mold), Ohsawa teaches using a vulcanizing mold. See for example paragraph 209. One of ordinary skill in the art would readily understand that the mold has surfaces corresponding to the projections so that an actual tire having such projections can be vulcanized.

As to the dependent claims: As to claim 2, the claimed angle of 15-55 degrees would have been obvious in view of Ohsawa's teaching to form projections with a pitch less than two times the depth to reduce resistance to flow and Lobert et al's teaching to undercut asymmetrically shaped projections to reduce resistance to water flow. As to claim 3, the limitation of curved line apexes would have been obvious since Ohsawa suggests that the peaks of the projections may be curved (see e.g. figure 9). As to claim 4, note the teaching from the above applied prior art to use an undercut asymmetrical cross section for the projection. As to claim 5, the claimed non-zero angle beta being between -15 degrees and +15 degrees would have been obvious in view of Ohsawa's suggestion to use grooves to define projections and Ohsawa's teaching that the grooves may be inclined and non-parallel (figure 22). As to claim 6 (distance d being 0-100 micrometers), note the spacing of the projections disclosed by Ohsawa. As

to claim 7, the limitation of the sides being slightly curved would have been obvious since Ohsawa suggests that the sides of the projections may be curved (see e.g. figure 9). As to claim 8, the claimed varying angle alpha would have been obvious in view of Ohsawa's suggestion to vary angle theta 1 (figure 15) so that the tire can easily be removed from the mold. As to claim 9, the claimed varying height would have been obvious since Ohsawa shows vary height (figure 15) so that the tire can easily be removed from the mold. As to claims 10-13, Ohsawa teaches providing the projections in a groove of a tread (e.g. on the sidewalls and bottom of a groove). As to claim 15, the description of "lettering" fails to require structure different from that disclosed in Ohsawa. In figure 1 of Ohsawa, the projection forms the letter "I". As to claim 18 (vulcanizing tire), Ohsawa as noted above teaches using a vulcanizing mold to form the tire.

Remarks

6) Applicant's arguments with respect to claim 5 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 12-28-04 have been fully considered but they are not persuasive.

Kemp et al

Applicant argues that the references do not address the same problems as those addressed by the instant invention and it would not, therefore, be obvious for one skilled in the art to look to the cited art for a solution. Applicant states: "The problems that the claimed invention is intended to reduce or eliminate are: enhanced self-cleaning;

improved optical appearance; improved water repellence that reduces the risk of aquaplaning; and allow for color differentiation" (page 5 of response filed 12-28-04). Applicant's argument is not persuasive. First: It is not necessary that the references address the same problem addressed by the invention. MPEP 2144 ("The reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant.", page 2100-134, Rev., May 2004). Second: Kemp et al, like applicant, uses projections for an optical effect. Third: Ohsawa et al, like applicant, uses projections, to reduce risk of hydroplaning.

Applicant argues that Kemp does not teach undercut projections (bottom of page 5 of response filed 12-28-04). Applicant is incorrect. Kemp teaches undercut projections at col. 5 lines 48-53. It is acknowledged that Kemp does not prefer undercut projections.[1] However, the "... case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention". In re Fulton 73 USPQ2d 1141, 1145 (CAFC 2004).

Applicant argues that Roberts et al's projections are flat at the top. More properly, Roberts et al's projections are undercut. Viewed as a whole, Kemp et al and Roberts et al teach projections for optical effect wherein Kemp et al teaches providing

[1] Kemp et al teaches that undercut projections are "undesirable from a manufacturing point of view", but does not criticize, discredit, or otherwise discourage the use of undercut projections to obtain the disclosed optical effects. In short, Kemp et al fails to teach that undercut projection cannot create an optical contrast to provide clearly visible indicia.

such projections with asymmetric cross section to obtain optical contrast at a wide range of viewing and illumination angles, Kemp et al recognizes that the projections for optical effect can be undercut (col. 5 lines 47-53) and Roberts et al teaches that undercut projections for optical effect (figure 5E) are alternative to projections for optical effect which are not undercut (e.g. figure 5A).

With respect to the optionally applied Ohsawa and Lobert references, applicant does not traverse the examiner's conclusion that the claimed projection height of 0.0002 - 0.1 mm is suggested by Kemp et al.

Applicant argues that the unexpected result of the invention is to solve simultaneously the need for improved hydroplaning reduction; optical and color differentiation, and a reduction in dirt collection within the channels. This argument is not persuasive since applicant has presented no evidence of unexpected results. See MPEP 716.01(c) ("Attorney arguments cannot take the place of evidence", page 700-256, Rev. 2, May 2004).

With respect to claim 9, applicant's arguments regarding Attinello are not persuasive since Attinello et al's benefit of using different height projections (if a tire scrubs the road, only the outermost ridges may be damaged) is independent of the cross sectional shape of the projections.

With respect to claim 17, applicant argues that Baker does not teach applying the tape to a vulcanized tire. Applicant is incorrect. Baker teaches that tape may be applied before or after the tire is mounted on a vehicle. Such a tire is vulcanized. This conclusion is consistent with Baker's teaching to mark a "previously molded vehicle tire"

(abstract) and Baker's teaching that the molding process is alternatively described as a vulcanization process (col. 2 line 8). With respect to applicant's argument that Baker does not teach projections configured as in claim 17, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Ohsawa

Applicant argues that Ohsawa does not teach undercut projections in a tire. More properly, Lobert et al and Japan '135 teach undercut projections. Lobert et al suggests using asymmetrically shaped undercut projections as an alternative to asymmetrical projections which are not undercut. Lobert et al is reasonably pertinent to the problem faced by Ohsawa. Both Ohsawa and Lobert et al are directed to the same problem of reducing friction between water and a surface. Both Ohsawa and Lobert et al use the same solution (small asymmetrically shaped projections) to reduce friction between water and a surface. With respect to the combination of Ohsawa and Lobert et al, there is a reasonable expectation of success since Japan 135 discloses that undercut projections in grooves of a tire tread can be formed.

Applicant argues that Lobert et al's sole objection is to reduce or eliminate friction whereas the present invention is to enhance friction between the surface of the tire and the road. This argument is not persuasive since (1) applicant fails to address Ohsawa's teaching to use the small projections to reduce frictional resistance between water and the groove walls and (2) each of applicant, Ohsawa and Lobert et al use small

projections to reduce friction between water and a surface (see paragraph 16 of applicant's specification, paragraph 14 of Ohsawa and col. 1 lines 5-10 of Lobert et al).

Applicant states: "The unexpected results achieved by the present claimed invention is the use of undercut projections that not only provide a well-defined channel to move water away from the tire surfaces prone to hydroplaning, but also for accomplishing the ancillary purposes of providing for enhanced optical and color capability through variations in the angle of such projections and/or the angle between neighboring projections." (page 6 of response filed 12-28-05). No unexpected results over the applied prior art has been shown. Attorney arguments cannot take the place of evidence. See MPEP 716.01(c), page 700-256, Rev. 2, May 2004.

7) No claim is allowed.

8) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
March 20, 2005

Steven D. Maki 3-20-05
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AU 1733